

**PHENOTYPIC STABILITY OF YIELD AND ITS COMPONENT TRAITS IN  
LENTIL  
(*LENS CULINARIS* MEDIK)**

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**Abstracts:** Thirty genotypes of lentil were evaluated under four diverse environments for stability analysis for yield and its related traits. Pooled analysis of variance for all the eleven characters indicated significant differences among the genotypes and environments. The linear component was observed to be significant for all the characters suggesting that the prediction of performance of genotypes were possible across the environments. Genotype L-4676 and L-4594 were observed to be desirable and stable for seed yield as well as other characters like number of primary and secondary branches/plant, plant height, 100 seed weight and biological yield. Further, the genotype L-415 was having high yield,  $S^2d_i=0$  and  $b>1$  indicating that this genotype would perform better in favourable environmental conditions.

**Keywords:** Lentil,  $G \times E$  interaction, Phenotypic stability, Seed yield

**REFERENCES**

**Abo-Hegazy, S.R.E.; Selim, T. and Ashrie, A.A.M.** (2013). Genotype x environment interaction and stability analysis for yield and its components in lentil. *J. Plant Breed. Crop Sci.* 5: 85-90.

**Allard, R.W. and Hansche, P.E.** (1964). Some parameters of population variability and their implication in plant breeding. *Adv. Agron.* 16: 281-324.

**Comstock, R.E. and Moll, R.H.** (1963). Genotype-environment interactions. Statistical genetics and plant breeding. *Nat. Acad. Sci. Nat. Res. Council Publ.*, 982: 16-196.

**Dehghani, H; Sabaghpour, S.H. and Sabaghnia, N.** (2008). Genotype  $\times$  environment interaction for grain yield of some lentil genotypes and relationship among univariate stability statistics. *Spanish J. Agric. Res.* 6: 385-394.

**Eberhart, S.A. and Russell, W.L.** (1966). Stability parameters for comparing varieties. *Crop. Sci.*, 6: 36-40.

**El-Saied, F.M. and Afiah, S.A.N.** (2004). Genetic evaluation of different lentil genotypes under rainfed conditions of North Sinai. *Arab Universities Journal of Agricultural Sciences*, 12(1): 331-347.

**Kumar, R., Sharma, S.K., Luthra, O.P. and Sharma, S.** (2005). Phenotypic stability of lentil genotypes under different environments. *Annals of Biology*, 21(2): 155-158.

**Kumar, S. and Bajpai, G.C.** (1993). Stability of lentil varieties. *Indian Journal of Pulses Research*, 6(1): 92-95.

**Lin C.S., Binns M.R.** (1988). A superiority measure of cultivar performance for cultivar  $\times$  location data. *Can J. Plant Sci.* 68: 193-198.

**Sabaghnia, N; Karimizadeh, R and Mohammadi, M.** (2012). Genotype by environment interaction and stability analysis for grain yield of lentil genotypes. *Žemdirbystė-Agriculture*, 99: 305-312.

**Solanki, I.S.** (2001). Stability of seed yield and its component characters in lentil (*Lens culinaris*). *Indian Journal of Agricultural Sciences*, 71(6): 414-416.